

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference GC839-PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, Item 5 below.	
International application No. PCT/US2005/012270	International filing date (day/month/year) 12/04/2005	(Earliest) Priority Date (day/month/year) 15/04/2004
Applicant GENENCOR INTERNATIONAL, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 7 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☒ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☒ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (see Box No. III)

4. With regard to the **title**,

- ☐ the text is approved as submitted by the applicant
☒ the text has been established by this Authority to read as follows:

ANTI-CEA SCFV-BETA-LACTAMASE CONSTRUCTS (CAB MOLECULES) IN ADEPT

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the drawings to be published with the abstract is Figure No. _____

- ☐ as suggested by the applicant
☐ as selected by this Authority, because the applicant failed to suggest a figure
☐ as selected by this Authority, because this figure better characterizes the invention

b. ☒ none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2005/012270

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. type of material
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☒ on paper
 - ☒ in electronic form
 - c. time of filing/furnishing
 - ☐ contained in the international application as filed
 - ☐ filed together with the international application in electronic form
 - ☒ furnished subsequently to this Authority for the purpose of search
2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2005/012270

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07K19/00 A61P35/00 A61K31/195
ADD. C07K16/30 C07K14/245 C12N9/86

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, PAJ, EMBASE, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	MEYER D L ET AL: "SITE-SPECIFIC PRODRUG ACTIVATION BY ANTIBODY- LACTAMASE CONJUGATES: PRECLINICAL INVESTIGATION OF THE EFFICACY AND TOXICITY OF DOXOXRUBICIN DELIVERED BY ANTIBODY DIRECTED CATALYSIS" BIOCONJUGATE CHEMISTRY, ACS, WASHINGTON, DC, US, vol. 6, no. 4, 1 July 1995 (1995-07-01), pages 440-446, XP000517229 ISSN: 1043-1802 page 441	1-6, 8-13, 15-20, 22-34
Y	WO 03/055527 A (VLAAMS INTERUNIVERSITAIR INSTITUUT VOOR BIOTECHNOLOGIE VZW; REVETS, HI) 10 July 2003 (2003-07-10) example 1	1-6, 8-13, 15-20, 22-34



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

27 April 2006

Date of mailing of the international search report

18/05/2006

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Wagner, R

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2005/012270

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WU A M ET AL: "Tumor localization of anti-CEA single-chain Fvs: improved targeting by non-covalent dimers" IMMUNOTECHNOLOGY, ELSEVIER SCIENCE PUBLISHERS BV, NL, vol. 2, no. 1, February 1996 (1996-02), pages 21-36, XP004052689 ISSN: 1380-2933 table 1	1-6, 8-13, 15-20, 22-34
Y	MCDONAGH CHARLOTTE F ET AL: "Improved yield and stability of L49-sFv-beta-lactamase, a single-chain antibody fusion protein for anticancer prodrug activation, by protein engineering." BIOCONJUGATE CHEMISTRY, vol. 14, no. 5, 25 July 2003 (2003-07-25), pages 860-869, XP002378783 ISSN: 1043-1802 page 862	5,6,12, 13
A	STICKLER M M ET AL: "CD4+ T-CELL EPITOPE DETERMINATION USING UNEXPOSED HUMAN DONOR PERIPHERAL BLOOD MONONUCLEAR CELLS" JOURNAL OF IMMUNOTHERAPY, LIPPINCOTT WILLIAMS & WILKINS, HAGERSTOWN, MD, US, vol. 23, no. 6, November 2000 (2000-11), pages 654-660, XP008040520 ISSN: 1524-9557 the whole document	7,14
E	WO 2005/058236 A (GENENCOR INTERNATIONAL, INC; FOX, JUDITH, A; HARDING, FIONA, A; SCHELL) 30 June 2005 (2005-06-30) figure 25A	1-34
A	HEFTA L J F ET AL: "Kinetic and affinity constants of epitope specific anti-carcinoembryonic antigen (CEA) monoclonal antibodies for CEA and engineered CEA domain constructs" IMMUNOTECHNOLOGY, ELSEVIER SCIENCE PUBLISHERS BV, NL, vol. 4, no. 1, June 1998 (1998-06), pages 49-57, XP004127386 ISSN: 1380-2933 the whole document	1-34
	----- -/--	

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2005/012270

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
T	HARDING FIONA A ET AL: "A beta-lactamase with reduced immunogenicity for the targeted delivery of chemotherapeutics using antibody-directed enzyme prodrug therapy" MOLECULAR CANCER THERAPEUTICS, vol. 4, no. 11, November 2005 (2005-11), pages 1791-1800, XP002378784 ISSN: 1535-7163 the whole document	1-34
A	WO 91/01990 A (CITY OF HOPE) 21 February 1991 (1991-02-21) the whole document	1-34

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/012270

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 15-34 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2005/012270

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03055527	A	10-07-2003	AU 2002361236 A1 CA 2471645 A1 JP 2005517674 T US 2005048060 A1	15-07-2003 10-07-2003 16-06-2005 03-03-2005
WO 2005058236	A	30-06-2005	NONE	
WO 9101990	A	21-02-1991	AU 629401 B2 AU 6344790 A CA 2035899 A1 DE 69018801 D1 DE 69018801 T2 EP 0436016 A1 JP 2966924 B2 JP 4502258 T US 5081235 A	01-10-1992 11-03-1991 27-01-1991 24-05-1995 19-10-1995 10-07-1991 25-10-1999 23-04-1992 14-01-1992